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Original Article

Some lessons from scientific practice on its development and growth of knowledge

On Feyerabend's perceptive view in epistemology

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Abstract
Feyerabend generally is known most for his discovery on the helpfulness of breaking rules when they become a hindrance and for the legitimacy of the counter-inductive approach as a way to make fundamental changes in science. But his view about the decontamination of old theories and the implantation of new theories' conception deserves equal recognition. And, of course, his alternative of open instead of closed exchange is invaluable as epistemological contribution. All this together make Feyerabend's viewpoint very distinct, especially to understand the need of openness as a condition to make easy the scientific development. Those three aspects constitute the originality of Feyerabend's contribution in the philosophy of science, which will be the focus of this paper. These novelties, as it will be argued, fill respective aspects where previously there were shortcomings, which made possible to clarify

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epistemologically the understanding and explanation, according to the practice, how the development of science and the growth of knowledge were attained (and as a consequence how they usually go). The approach of the treatise pursues the historical context and the theoretical articulation of Feyerabend's view, including some critical reflections.

Keywords: *legitimacy of counter-rules, open exchange, (de)contamination of evidence, scientific development, growth of knowledge, Feyerabend*

From the outset it must be stated that the epistemological contribution and approach of Feyerabend can rightly be understood only in the light of the developments of 20th century philosophy of science, and especially the famous 1965 debate, where Karl Popper, Thomas S. Kuhn, Imre Lakatos, Paul Feyerabend, John Watkins, Stephen Toulmin, Margaret Masterman and others were faced (Lakatos & Musgrave, 1970). Though Kuhn's new view of *Structure of Scientific Revolutions* first published in 1962 had to be debated, because it overturned almost everything and restructured a new look on the development of science, the debate was in turn transformed into a general epistemological confrontation. It was argued for and against different viewpoints like the verificationism of logical positivism, which no longer had any representatives but inevitably had to be taken into account due to the specifics of their approach (Misak 1995, pp. 58-88), and Popper's falsificationism; as well the Kuhn's new epistemological theory has been hardly attacked. It turned, therefore, into an intellectual frontal confrontation between Karl Popper (Lakatos & Musgrave, 1970, pp. 51-58), Thomas S. Kuhn (pp.

1- 22, 231-277), Imre Lakatos (pp. 91-193) and Paul Feyerabend (pp. 197-230). There Kuhn excelled in defending his point of view - the development of science through the normal periods and scientific revolutions which happened from time to time. The influence of Kuhn's theory emerged in that debate as well: Imre Lakatos (Lakatos & Musgrave, 1970, pp. 91-193) introduced a theory similar to that of Kuhn, with a more philosophical formulation, merging the theory and methodical rules into the *methodology of scientific research programmes*.

In this debate, Feyerabend (Lakatos & Musgrave, 1970, pp. 197-230) was presented with the "Consolations for the Specialist", where he presented an approach somewhat different from others, a very original aspect, the embryonic view which he would develop in a genuine epistemological theory in the *Against Method* firs published in year 1975. This view of Feyerabend was an extension encouraged by Kuhn's and Lakatos' epistemological theory, as an attempt to understand the historical configuration of science from a comprehensive approach.

In the spectrum of modern epistemological theories of the 20th century, besides the verificationism of logical positivism, Karl Popper's falsificationism, Kuhn's paradigms shift as alternation of normal science-scientific revolution, the Lakatos's methodology of scientific research programmes, and the epistemology of Feyerabend had a meritorious place. All of these theories are puzzles that make up a mosaic of diverse views of science, of its problems and progress, including agreements, differences and contradictions, which also made good contributions but also led to mutual dismantling (Abazi, 2014, p. 413-422).

Given this historical context of the philosophy of science, a context somehow still current, the contribution of Feyerabend to the most relevant issues will be emphasized, including some of the epistemological implications which he brought.

The epistemological necessity of breaking rules

Like logical positivists including Alfred Ayer (1936, 1940, 1956, 1959), Karl Popper (2002, 1962, 2009), Thomas S. Kuhn (1970, 1985) and Imre Lakatos (1970), Feyerabend has similarly derived his viewpoint from the history of science.

It can be said that similar to the logical positivists, Popper Feyerabend realized that it was common for science to exist in a plurality of scientific theories. For the logical positivists, the plurality of the theories was applied on the local level and to particular theories. For Popper, alternatively, it was at the general level of theories, i.e. systems. Influenced by Kuhn and Lakatos, Feyerabend, too, re-concepted the word theory, giving a similar meaning to what Kuhn's paradigm or Lakatos's research programmes have. According to him, the science consists of two main components: the normal and philosophical component (Lakatos & Musgrave, 1970, p. 212). In this sense, the changes in the normal component are resistant, and when they occur, they are visible, while those of the philosophical component are both strong and noticeable (p.213). Apparently, the view of Feyerabend is a simplification of the concept of paradigm and the scientific research program, but it lacks a further elaboration. It can be said that in terms of the plurality of theories, Feyerabend is closer to the concept of logical positivists and Karl Popper as well as Lakatos on

pluralism of theories that, in addition to other aspects, influenced him to perceive the scientific situation as anarchist.

However, there was something essential that the logical positivists or Popper did not understand, which Feyerabend did. The first considered that progress of science is possible by the inductive method and in their perception, this was the only scientific method; the latter, including Popper, considered solely the deductive method (i.e. the trial and error method). Contrasingly, Feyerabend (1993, 1978, 1987) understood that there was not *yet* a method that could made possible the progress of science. Of course, science had advanced, but differently.

Thomas S. Kuhn had argued that there is no such method to be valid inter-paradigmatically (Kuhn, 1970, p. 3), according to which one could determine to choose between rival paradigms. Moreover, he had set the rules on the second plan, and had claimed that science could function without any rules when there is a paradigm. He writes: "Paradigms may be prior to, more binding, and more complete than any set of rules for research that could be unequivocally abstracted from them" (Kuhn, 1970, p. 46). Feyerabend went further. By studying Copernican Revolution, especially Galileo Galilei's example of action, he understood that methodical rules could play a wholly different role from what the logical positivists or Karl Popperi surmised.

If the implemented methodical rules are considered as compulsory, then they can at a given time become a hindrance to progress, having a conservative, deterrent role. This becomes visible especially at the time of dramatic developments when science has to make radical changes, i.e.

scientific revolutions, but that those changes are strictly prohibited by the rules of the method. In order to make the progress of science, one must act contrary to such prohibition. This is clearly expressed in Feyerabend (1993, p. 14):

> ... there is no single rule as convincing as it seems, and however well-based on epistemology, which has not been violated at any time or else. It is clear that such violations are not accidental events, are not the result of insufficient knowledge or carelessness that could have been avoided.

Indeed, the breaking of the rules was (and is) an epistemologically necessary action to open the perspective of change, that is, to bring science out of deadlock.

In what sense is the epistemological counter-rule helpful?

In his masterpiece *Against Method* (1993, p. 14, 20) Feyerabend has clearly expressed his standpoint against fixed rules, and instead has advocated for counter-rules and has argued why they are valid and more functional. It can be said that the counter-rules are to science just as valuable as the rules itself, and in certain times, far more valuable than rules. Therefore, the action against the rules Feyerabend established –was the counter-inductive method (Feyerabend, 1993, p. 20).

Common scientific practice, according to the logical positivists, was to develop hypotheses in accordance with the facts so that they (i.e. hypotheses) could be empirically verified (Ayer, 1936, p. 6). According to Popper (2002, p. 66), scientists had to look for potential falsifiers within theories

or to develop opposing hypotheses to existing theories in order to refute them. Feyerabend put forward a different view, broadening it:

Hypotheses, namely theories, could be developed differently, approached in the opposite perspective, i.e. counter-inductive manner. This method suggests, on the one hand, "the counter-rule that urges us to develop hypotheses inconsistent with accepted and highly confirmed theories ", and, on the other hand, the "the counter-rule that urges us to develop hypotheses inconsistent with well-established facts" (Feyerabend 1993, p. 20).

Feyerabend continues by providing an explanation of how this can be done. He writes: "Examining the principle in concrete detail means tracing the consequences of 'counterrules' which oppose familiar rules of the scientific enterprise" (p. 20). This is based on the assertion that "given any rule, however 'fundamental' or 'rational', there are always circumstances when it is advisable not only to ignore the rule, but to adopt its opposite "(Feyerabend, 1993, p. 14). A common rule of scientific research is that "experience" or "facts" or "experimental results" are considered as a measure of the success of the theories. According to this rule, the agreement between a theory with the 'data' favors the theory or leaves the situation unchanged, while the discrepancy risks it until elimination. This rule, being the core of empiricism, is an important part of all theories of confirmation and corroboration. The 'counterrule' corresponding to it advises us to introduce and elaborate hypotheses which are inconsistent with well-established theories and/or well-established facts. It also "advises us to proceed counterinductively (Feyerbaend, 1993, p. 20).

First, it is known that, the creation of hypotheses contrary to prevailing theories has been highlighted by Popper in order to reject the ruling theory. But the purpose of Feyerabend is different: to know more from the theories that contradicts well-**e**stablished ones. Secondly, the creation of hypotheses in opposite to well-established facts is an original idea of Feyerabend. If it is possible to write such hypotheses and to be consistent, then chances are that knowledge into a different part of reality is to be achieved. This indicates that in the epistemological aspect Feyerabend aims to liberate scientists, but also philosophers, from the rigidity of approaches, from looking exclusively in one direction. Such a perspective is contrary to dogmatism, whether open or camouflaged, because it is non-dogmatic (Abazi, 2018, pp. 103-122).

This brings us to the explanation of Feyerabend concerning the epistemological usefulness of counter-inductive action: "Hypotheses contradicting well-confirmed theories give us evidence that cannot be obtained in any other way" (Feyerabend, 1993, p. 24). Thus, according to him, acting through the breaking of rules is absolutely necessary for the growth of knowledge (p. 14), of course, under certain conditions and circumstances, when such action actually allows the exit from the state of stagnation.

The theory -counterinduction- a new theory relationship

Against Method is an elaboration that, in some ways, strips the role of the method from the cloaks of myth, understood in its narrow and strict usage, pointing to cases where there is no other way of action except in contradiction to the rules

that had prevailed for decades and perhaps even for centuries.

Unlike Francis Bacon (2003), René Descartes (2006), David Hume (1826) and others which tried to find a proper method for science (Abazi, 2018, pp. 108-115), there were some other philosophers who had seen in the other direction as well. One of them is Michael Oakeshot, who, in his "Rationalism in Politics" first published in 1947, had noted the negativity of the absolutizing role of the method, which he called "the sovereignty of technique" (Oakeshott, 1991, p. 22). Another, as mentioned above, was Thomas Kuhn (1970, pp. 41, 46-47), who has shown that science, when there is a paradigm, can function without any rule. Hence, it can be said that Oakeshot, as well as Kuhn, were the forerunners of the viewpoint of Feyerabend. Unlike them, the latter managed to synthesize their views in his own way, eliminating the exclusivity of the technique's sovereignty.

The result of this was the alternation theory-counterinduction- as a new t approach. With the counter-inductive action, Feyerabend showed that it is legitimate to approach well-established theories with the creation of new, alternative theories, as well as practical action of scientists. His viewpoint was clear: the science may advance by proceeding counter inductively (Feyerabend, 1993, p. 20).

The alternation theory-counter-induction- a new theory as an approach, according to Feyerabend, aims to create research tolerance for the alternative actions in scientific practice by removing scientists from dogmatic tightening to methodical rules and theories. It was also a boost for the creation of new, alternative theories. Feyerabend rightly believed that if such freedom of choice, selection and action existed, unimpeded by the existing

rules, science would progress more freely, and knowledge would gradually increase unhindered.

Contaminated evidence and objectivity issue

Evidences are generally considered as independent, as data, which are as they are. This view was shared by logical positivists (Ayer, 1959, 144), taking them as natural, that is, they exist somewhere in nature as they are. But Karl Popper (2002, 37, pp. * 1) reveals another possibility, that the interpretations of observations are made in the light of theories. Thomas Kuhn (1970, p. 7) had gone even further, emphasizing that it was a paradigm that indicated not only what kind of entities universe contains but also what it does not contain.

Feyerabend pays special focus to this aspect, making a valuable contribution. Epistemologists, e.g. Alfred Ayer and Karl Popper, talk about the mistakes contained in the theories about reality. But Feyerabend saw the issue from another perspective: "it is not always the theory that is to blame" (Feyerabend, 1993, f. 52). And if so, then the issue should be treated differently, and that is exactly what Feyerabend did.

Against the conditions and circumstances when the theories, especially the new ones, did not match the evidence, his focus was to understand why the evidence was inappropriate. In his examination, he understood that the problem could be in the evidence as well. "Facts are constituted by older ideologies" asserts Feyerabend (1993, 39). This concerns the facts known in a historical context of science with the "old ideologies" referring to existing theories, which are contrary to the new one. Based on this,

he concluded that "*the evidence is contaminated*" (Feyerabend, 1993, p. 52).

If that is the case, then it touches on an important epistemological issue: that the facts are objective, in the sense that they are independent and uninfluenceable from the views of scientists. The argument of Feyerabend that the evidence is contaminated reveals a major problem: the objectivity is not entirely objective, and therefore objectivity should be seen in another light. First and foremost, the facts do not always have primacy over theories. Therefore, one of the conditions for objectivity, according to Feyerabend, is the existence of different views, since the "Variety of opinion is necessary for objective knowledge" (Feyerabend, 1993, p. 32).

The issue, indeed, is deeper. Feyerabend still breaks down more concretely. He writes that it "is ... *historico-physiological character of the evidence*, the fact that it does not merely describe some objective state of affairs *but also expresses subjective, mythical, and long-forgotten views* concerning this state of affairs, that forces us to take a fresh look at methodology" (Feyerabend, 1993, p. 52)

Accordingly, "it would be extremely imprudent to let the evidence judge our theories directly and without any further ado" (Feyerabend, 1993, f. 52). This results in a different methodological outlook: If the evidence expresses discrepancy with the reference of the new theory it may be indicative of something altogether else. Concretely "a clash between facts and theories may be proof of progress" (Feyerabend, 1993, f. 39).

With this difficulty of mismatching the facts with the new theory, he addresed the theories of Copernicus, and particularly Galileo (Feyerabend, 1993, p. 52). The latter's action, to which Feyerabend paid special attention as a case

study, is an illustration that clearly conveys what he means by the contamination of evidence, which will be put forward in the following.

Decontamination is an infiltration of new language

How did Galileo succeed to push forward heliocentrism, given that the evidence was contaminated with the "old ideologies" of geocentrism? The answer is that he did this indirectly, as geocentrism was embedded in conviction and worldview, in belief, and was transformed into "reality". In such a situation, it seems that the only mode of action was the stunt, using, according to Feyerabend (1993, p. 16), of "propaganda and coercion". Of course, not only that. In addition, "interests, forces, propaganda and brainwashing techniques play a much greater role than is commonly believed in the growth of our knowledge and in the growth of science" (p. 17).

Of course, this was not the entire business, but just the foreplay. Such a foreplay, nonetheless is nonsensical, and not methodical. However, it turns out to be "an unavoidable precondition of clarity and of empirical success" (Feyerabend, 1993, f. 16-17). Such action is no exception, but it is a normal act says Feyerabend (1993, p. 16). Of course, the condition and circumstances of the methodological stoppage was harsh in Galileo's time and its contestation was forbidden. Such actions, analogously, can also be made in any similar circumstance.

One dimension of this action is directly and inevitably related to the scientific language, and from it the incommensurability, a thesis to which both Kuhn and Feyerabend arrived separately, but at the same time. This

thesis is related to the different languages that use different theories, suggesting that, to make them understandable, they should be translated. Such a theory like geocentric, its language, due to the long usage, is considered by all to be a "natural language". But it is not. It is just a language of a certain theory, a language that needs to be changed. This can be done by implanting the language of the new theory, e.g. of heliocentric, that would make the earth look like a planet and the sun as a non-planet, which is a very deep and substantive change.

To understand developments of this kind in a general way, writes Feyerabend, "we are, of course, obliged to appeal to the existing forms of speech ...which must be distorted, misused, beaten into new patterns in order to fit unforeseen situations". He continues that it is no coincidence but the rule that "without a constant misuse of language there cannot be any discovery, any progress" (Feyerabend, 1993, f. 18).

That is what Galileo did, according to Feyerabend. By doing this, he decontaminated the observation, perception, experience and the way of understanding from the old language. He made the changes undeclared, that is, by infiltrating them, nourishing them with the new Copernican language, so that the evidence becomes perceptible in a new way.

How did Galileo act?

Feyerabend makes a breakthrough interpretation of Galileo Galilei's action. In the debate with the Aristotelians Galileo asserted the correctness of observations data, as well deactivated (rather than rejecting) the main argument

against the movement of the earth, aiming to change the conceptual system (Feyerabend, 1993, p. 55). Arguing that our perceptions through the senses may deceive, Galileo said: "how easily anyone may be deceived by simple appearance, or let us say by the impressions of one's senses", and to avoid the deceives of senses is needed intervention of reason (p. 56).

After the intervention of reason, although observations have not changed, new observational assertions are introduced, which play a better or worse role in our knowledge, whereby the appearance and affirmation are not two, but melted into one; that is to say that the appearance or phenomenon is just as the assertions say they are, and the language with which they speak is influenced by the beliefs of the early generations (Feyerabendi 1993, f. 57), which are called "*natural interpretation*" (p. 58).

It is this natural language, being Aristotelian (geocentric) that had to be decontaminated, to make it possible to see reality differently, namely according to Copernican (heliocentric) language. Galileo, through the method of reminiscence, created the impression that nothing is changing and observations in the old family language are being repeated (Feyerabend, 1993, p. 58). "It is, therefore, better" wrote Galileo on his book *Dialogue Concerning the Two Chief World Systems,* "to put aside the appearance, on which we all agree, and to use the power of reason either to confirm its reality or to reveal its fallacy" (Feyerabend, 1993, f. 58). Indeed, it was not that everyone agreed with the appearance, Galileo disagreed, but he said this with the deed to create the confidence of interlocutors that it would not be contested as such, as they had agreed. Attention was drawn elsewhere: what would be considered was appearance's

truthfulness, to achieve a confirmation or to reveal an error. Really, behind that was concealed the purpose to show that the appearance was wrong, and that a conclusion was to be achieved.

This is obvious because natural interpretations are so intimately related to appearances (Feyerabend, 1993, 58). What Galileo did was to replace existing natural interpretation with another new one, so he inserted "a new observational language" (Feyerabend, 1993, 63). This was done without being noticed (Feyerabend, 1993, 65). In this sense, stresses Feyerabend, "Galileo uses *propaganda*. He uses *psychological tricks*... These tricks are very successful: they lead him to victory" (Feyerabend, 1993, f. 65).

Galileo intends to replace the conceptual system of absolute movement with that of the relative movement as valid for all cases (Feyerabend, 1993, pp. 69-70), partially revising the observation language or experience (p. 71). With this action of Galileo "experience which partly contradicts the idea of the motion of the earth is turned into an experience that confirms" (Feyerabend, 1993, p. 71).

Galileo expressed a simple example: while the boat is in motion if you look at sail yard it will appears motionless to you (Feyerabend. 1993, p. 67). Similar examples are: everyone can imagine that, for example, if you are within a navigating boat and look to shores it will appear to move the shores and not the boat, while if you are on the shore it appears that the shores do not move, but the boat. Such impressions, Galileo stressed, have been known since, but indeed they were the result of Galileo's propaganda machinery (Feyerabend, 1993, p. 71). In this way, he changed the conceptual system, also the experience, whereby the doctrine of Copernicus could be accommodated. Feyerabend

asserted that as a result of such changes "the relative notions not only to boats, coaches, birds, but to the 'solid and well-established earth' as a whole" can be practiced (Feyerabend, 1993, f. 72).

"It is this change" of notions meaning, concludes Feyerabend (1993, f. 72), which underlies the transition from the Aristotelian point of view to the epistemology of modem science". In other words, this is a part of how the triumph of Copernican revolution has become possible.

The way of progress of science with open exchanges

The path through which science advances in its headway is a very complex one. Since a view is accepted and embraced by the majority of the scientific community, a view of decades' or centuries' longevity turns somehow into a natural state, in something that is so, undisputed. Such was the situation when geocentrism ruled.

Such a condition, by itself, becomes a barrier to fundamental change. At its service are the overwhelming majority of scientists, ecclesiastical institutions, the judiciary, and even the general public. Having this in mind, everyone can consider the big hindrances in the case of the Copernican hypothesis, "whose invention, defense, and partial vindication runs counter to almost every methodological rule one might care to think of today" (Feyerabend, 1993, p. 51).

Change could be made at the outset to the way Galileo acted, not contesting observations but stealthily changing the conceptual content. Such acting was de facto against the rules of the game. In the circumstances of the prohibition of a different approach, the action that broke the rules was "a

necessity for progress" and this is "the fact of the history of science", which is also "reasonable and absolutely necessary for the growth of knowledge" (Feyerabend 1993, f. 14).

This was done in practice whenever revolutionary changes were required, and from the perspective of advancing science, such actions were legitimate, as they are the only possible way for the necessary changes.

Feyerabend has argued convincingly that the natural way to change the state is simply the counter-inductive action. From this derives that no methodology should be absolutized. In science there is nothing that can be said not to be allowed, if it makes possible the progress and growth of knowledge:

"To those who look at the rich material provided by history, and who are not intent on impoverishing it in order to please their lower instincts, their craving for intellectual security in the form of clarity, precision, 'objectivity', 'truth', it will become clear that there is only one principle that can be defended under all circumstances and in all stages of human development. It is the principle: *anything goes*" (Feyerabend, 1993, f. 18-19).

If this principle was to be accepted as a correct, legal action, then the methodological constraints are abolished. It means that scientists would be free to test different methodologies, different theories and hypotheses, as well as to examine evidence in order to achieve new knowledge differently. This acting, surely, would not harm science. On the contrary - it would help science develop more freely. Such a principle, indirectly, suggests a different approach to scientific developments: that of open exchanges (Feyerabend, 1993, pp. 227-228).

What had been understood by Feyerabend from the history of science and its greatest transformations was that the attitude and perception had to change. The defense at all costs of any epistemological point of view, no matter how good of a purpose it may have, can yield opposite results, even wholly inadvertently. Yet, so far, based on the history of science, science is an activity that changes, usually partially and rarely entirely, all the time, and it is obviously in its nature to be changed, as a process of advancement and growth of knowledge. But against this nature of science seem to operate the methodological rules when they are taken as inviolable and as universally valid, which prohibit actions outside the frames, prohibit changes, even thinking differently, that do not derive from its rules. When the state of non-change is also defended by the institutions of power, as was geocentrism by the Church, then all these, synchronized, turn into a developmental hindrance. The worst example of this and at the same time the most illustrative is the Inquisition. It is well known that it condemned to death Giordano Bruno in 1600. In 1616 it forbade Galileo the expression and defense of Copernicus views, sentencing him to house arrest in 1633 where he stayed until the end of his life (January 8, 1642). Likewise, in 1616 the Inquisition cursed and banned the work of Copernicus and Galileo, as well as all the writings that were in the heliocentric spirit (Kuhn, 1985, p. 106). The violence, however, merely delayed and pushed the change for the future, but could not stop it. The change, as it is already known, occurred.

Thus, from the history of triumph of Copernicanism it can be understood that violence, support from institutions, authority, and power is not the solution. As in the case of

geocentrism, such action can only cause victims, and makes the change more difficult. This was bad, wrong, and deterrent to the development of science, that's why it had to be changed. In this sense, Feyerabend advocated the separation of science from the state, just as the church was separated from the state. In this understanding, science should be developed according to its nature, character and internal conditions, without any external hindrances. In other words, a better, more flexible and open-minded approach to changes from the internal developmental processes of science were needed.

He expressed a new view: the changes, assimilations, calibrations of views, traditions and approaches have to be done freely, without imposing and without dictation, i.e. through "open exchanges". Feyerabend (1993, pp. 227-228) expressed this in the following way:

> An open exchange... is guided by a pragmatic philosophy. The tradition adopted by the parties is unspecified in the beginning and develops as the exchange proceeds. The participants get immersed into each other's ways of thinking, feeling, perceiving to such an extent that their ideas, perceptions, world-views may be entirely changed - they become different people participating in a new and different tradition. An open exchange respects the partner whether he is an individual or an entire culture, while a rational exchange promises respect only within the framework of a rational debate. An open exchange has no organon though it may invent one, there is no logic though new forms of logic may emerge in its course. An open exchange establishes connections between different traditions and transcends the relativism ... However, it transcends it in a way that cannot be made objective but

> depends in an unforeseeable manner on the (historical, psychological, material) conditions in which it occurs.

Thus, if the scientific community and the society itself advance within the mentality of tolerance, freedom of choice and free determination of the alternatives that are considered appropriate by those who embrace them, and accordingly, changes would be made through open exchanges accepted voluntarily and only through persuasion the serious limitations, such as the rational exclusivity of a certain theory, as in the example of egocentrism would be avoided. It would facilitate changes. Scientific development in a milieu of tolerance, understanding, and naturalness should proceed in function of what, in essence, is everyone's intentions - the progress in science and the growth of knowledge.

Conclusion: Feyerabend as a torch against prejudice and closed-minded

Some of the novel thoughts, those most essential, that Feyerabend brought were discussed in this paper. His epistemological view, which expresses the intellectual permeasion of certain aspects that no one previously attempted, bring some new aspects of understanding to the fore such as the advancement character of counter-rules, the alternation of theory-counterinduction-a new theory, the contamination of evidence with old theories, the need for their decontamination, and open exchanges as a path of developing science in a tolerant way.

It seems that the view of Feyerabend against the dogmatic character of method in scienceis historically right

by pointing to examples in history that illustrate the dangerous hindrances and restraints in the development of science if changes are banned, and how it could help if the counterinductive action was legitimized. In strengthening this, arguments that evidence is contaminated by old theories and must therefore be decontaminated as a condition for the emergence of new perspective were put forward. Through the counter-inductive approach, the principle that everything goes in order to reduce e hindrances, and open up exchanges in scientific activity, Feyerabend laid out an original epistemological point of view, in which a a tolerant road of development and progress of science can materialize.

Such a spirit turned into a view of the postmodern state: four years after the publication of the *Against Method*, Jean-Francois Lyotard (1984) broadly elaborated and pointed it out as a developmental stage in the *Postmodern Condition* first published in 1979. Particularly its two last chapters "Postmodern Science as the Search for Instabilities" and "Legitimation by Paralogy", considered by the author as the scientific approaches at present, are very similar to that of Feyerabend discussed in this paper.

In conclusion, it should be underlined that anyone who sincerely deepens in the contributions of Feyerabend stressed above, understands how current they still are in reducing scientific prejudices of a closed-minded mentality.

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